

APPENDIX

Appendix 1

To extract the ethnic-adjusted BMI at the different levels of FMI, the following steps were undertaken for each sex:

- 1) Fitted the following model¹:

$$BMI = \beta_1 FMI + \beta_2 Ethnic\ group_2 + \beta_3 Ethnic\ group_3 + \beta_4 Age\ Group_1 + \beta_5 Age\ Group_3 + \beta_6 FMI - Ethnic\ group_2 + \beta_7 FMI * Age\ Group_1 + \beta_8 FMI * Age\ Group_3 + Constant$$

- 2) Rearrange the above equation to find equivalent FMI for a given BMI in each of the age groups.

For example for the black Africans:

$$FMI_{age\ group_1} = \frac{BMI - (\beta_2 + \beta_4 + cons.)}{\beta_1 + \beta_6 + \beta_7} \quad Equation\ 1$$

$$FMI_{age\ group_2} = \frac{BMI - (\beta_2 + cons.)}{\beta_1 + \beta_6} \quad Equation\ 2$$

$$FMI_{age\ group_3} = \frac{BMI - (\beta_2 + \beta_5 + cons.)}{\beta_1 + \beta_6 + \beta_8} \quad Equation\ 3$$

- 3) Replace Equations 1 -3 into the model in (1) and calculate the adjusted BMI value for the child.

¹ * Indicates interaction term